

REMARKS

In the Office Action, the Examiner objected to the drawings and rejected claims 1-3, 6-9, and 12 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,002,802 of Chujoh et al. ("Chujoh"). The Examiner objected to claims 4, 5, 10, and 11 as being dependent on a rejected base claim but allowable if rewritten in independent form.

In this Amendment, Applicant has amended claims 1-12 to more appropriately define the invention and not for reasons related to patentability. Applicant has also added new claims 13-15 to protect further aspects of the invention. Claims 1-15 remain pending.

Applicant thanks the Examiner for the indication of allowable subject matter of claims 4, 5, 10 and 11.

In response to the objection to the drawings, Applicant submits herewith a Replacement Sheet containing Fig. 1 in which a block labeled "storage section" has been inserted within block 50. This change to Fig. 1 is supported by Applicant's specification at, for example, page 17, lines 23-26.

Applicant respectfully traverses the Examiner's rejection of claims 1-3, 6-9, and 12 under § 103(a) as unpatentable over Chujoh.

In order to establish a *prima facie* case of obviousness, three basic criteria must be met. First, the prior art references (or references when combined) must teach or suggest all the claim elements. Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify a reference or to combine reference teachings. Third, there must be a reasonable expectation of success. See M.P.E.P. § 2143.

Chujoh discloses video encoding apparatus. In a first embodiment,

the basic control is to calculate the target number of bits (target) of each frame to be encoded and, on the basis of this target number of bits (target) change the quantization parameter and the encoding frame rate, i.e., the number of frames to be skipped, thereby holding the delay time constant.

(Col. 7, line 13-17).

In a second embodiment, an encoding control circuit 116

adjusts the number of bits . . . which is decided by the encoding bit rate [rate] and the encoding frame rate [f_rate], such that the delay time when the output buffer 115 outputs the stored encoded data at the predetermined encoding bit rate (rate) is within the predetermined limit delay time [limit_delay], thereby setting the target number of bits (target) of each frame.

(Col. 12, lines 40-46.)

In a third embodiment, "a mode selector 216 selects a macro block to be subjected to inter-frame encoding and a macro block to be subjected to intra-frame encoding in units of macro blocks." (Col. 13, lines 32-36.) Fig. 13 is a flow chart that shows processing of a refresh decision circuit 217 that appears to control mode selector 216. In step 503, circuit 217 performs a computation to determine whether intra- or inter- coding should be performed. The computation uses numbers of macro blocks in the vertical and horizontal directions and a two-dimensional array storing information concerning motion and stationary domains in each macro block. (Col. 14, lines 58-Col. 15, line 6.)

In a fourth embodiment, illustrated in Fig. 15, a mode decision circuit 306 is controlled to cause no coding, intra-coding, or inter-coding, according to data decoded by a variable length decoder 303 to generate mode information. (Col. 16, line 62 - Col. 17, line 3.)

A fifth embodiment of Chujoh is "identical in structure to the third embodiment."
(Col. 18, lines 45-47.)

None of the disclosed embodiments of Chujoh disclose or suggest a moving picture encoding apparatus comprising a combination of features including "a quantization scale control section which controls a quantization scale indicative of a degree of quantization;" "a storage section which stores the quantization scale with which the encoding section encodes by the inter-coding, the code amount calculated by the code amount detection section, the quantization scale with which the encoding section encodes by the intra-coding, and the code amount calculated by the code amount detection section;" and "an encoding setting section which sets the encoding to be used by the encoding section to the intra-coding, if the skip number determined by the skip number control section is a predetermined first threshold or more and the quantization scale and code amount stored in the storage section satisfy a predetermined condition," as required by Applicant's claim 1.

More particularly, none of the embodiments of Chujoh set an encoding used by an encoding section to intra-coding according to a condition that "the skip number determined by the skip number control section is a predetermined first threshold or more and the quantization scale and code amount stored in the storage section satisfy a predetermined condition," as required by claim 1. Since none of Chujoh's embodiments discloses or suggests setting encoding according to such a condition, those embodiments also fail to disclose or suggest Applicant's claimed "storage section" for storing information for evaluating such a condition, i.e., storing "the quantization scale with which the encoding section encodes by the inter-coding, the code amount

calculated by the code amount detection section, the quantization scale with which the encoding section encodes by the intra-coding, and the code amount calculated by the code amount detection section.”

The Examiner admits that Chujoh fails to teach “a storage section which stores the quantization scale with which the encoding section performs encoding by the inter-coding type process, the code amount found by the code amount detection section at this time, the quantization scale with which encoding section performs encoding by the intra-coding type process, and the code amount found by the code amount detection section at this time.” (Office Action at page 3.) However, the Examiner asserts that “it is considered obvious to one of ordinary skill in the art at the time of the invention that storage must be required in order to allow the aforementioned data to be compared and analyzed [with] other processes.” (Office Action at page 3.) Applicant respectfully disagrees. Chujoh does not disclose or suggest the need to store or use such data in the determinations it makes for control of encoding in any of its embodiment. Chujoh does not disclose or suggest using such data for comparison or analysis. Therefore, there would not have been any motivation for a person of ordinary skill to modify Chujoh to store the information stored in Applicant’s claimed storage section.

The Examiner also admits that Chujoh “fails to specifically teach that Q scale and code amount meet specific conditions.” (Office Action at page 3.) The Examiner cites Col. 7, lines 12-17 of Chujoh with regard to “changing Q and frame rate . . . [resulting] in new frames being added.” (Office Action at page 3.) The Examiner also cites Col. 18 of Chujoh as allegedly teaching that “depending on time or long periods without a reference frame the mode is set to Intra.” (Office Action at pages 3-4.) The Examiner

concludes, apparently based on the cited portions of Chujoh, that "it would have been obvious to one of ordinary skill in the art to monitor Q scale as a quick way of determining whether overflow may exist." (Office Action at page 4.) Applicant respectfully disagrees. These portions of Chujoh do not disclose or suggest computations or determination to set "the encoding to be used by the encoding section to the intra-coding, if the skip number determined by the skip number control section is a predetermined first threshold or more and the quantization scale and code amount stored in the storage section satisfy a predetermined condition," as required by Applicant's claim 1.

Applicant therefore submits that claim 1 is patentable over Chujoh. Further, claims 2, 3, and 6 are also patentable over Chujoh at least due to their dependence from claim 1.

Applicant's independent claim 7 is directed a moving picture encoding method that comprises features generally corresponding to those discussed above with respect to claim 1, among others. Applicant therefore submits that claim 7 is also patentable over Chujoh for at least the reasons discussed above with respect to claim 1. Further, claims 8, 9, and 12 are also patentable over Chujoh at least due to their dependence from allowable claim 7.

New independent claim 13 is directed to a moving picture encoding apparatus comprising features that generally correspond to those discussed above with regard to claim 1, among others. Therefore, claim 13 is also patentable over Chujoh for at least the reasons discussed above with respect to claim 1. New claims 14 and 15 are also patentable at least due to their dependence from new claim 13.

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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GARRETT & DUNNER, L.L.P.

Dated: April 25, 2005

By: 

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Attachment: Replacement Sheet containing Fig. 1

AMENDMENTS TO THE DRAWINGS:

The attached Replacement sheet of drawings containing Fig. 1 includes changes to Fig. 1. In particular, Fig. 1 has been amended to add a "storage section" to block 50.

Attachments: One Replacement Sheet containing Fig. 1.